

CAS- STN SEARCH  
Do NOT Remove!

\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

2323 REFERENCES IN FILE CA (1957 TO DATE)  
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
2325 REFERENCES IN FILE CAPLUS (1957 TO DATE)  
51 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> FIL CAPLUS HCAPLUS USPATFULL USPAT2  
COST IN U.S. DOLLARS

SINCE FILE ENTRY	TOTAL SESSION
29.36	29.57

FULL ESTIMATED COST

FILE 'CAPLUS' ENTERED AT 13:33:37 ON 09 JUN 2003  
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FILE 'HCAPLUS' ENTERED AT 13:33:37 ON 09 JUN 2003  
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FILE 'USPATFULL' ENTERED AT 13:33:37 ON 09 JUN 2003  
CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

FILE 'USPAT2' ENTERED AT 13:33:37 ON 09 JUN 2003  
CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

=> d his

(FILE 'HOME' ENTERED AT 13:29:45 ON 09 JUN 2003)

FILE 'REGISTRY' ENTERED AT 13:29:51 ON 09 JUN 2003

L1 433 S SPARTEINE  
L2 0 S SPARTEINE EX SAM  
L3 3 S PENTROL

FILE 'CAPLUS, HCAPLUS, USPATFULL, USPAT2' ENTERED AT 13:33:37 ON 09 JUN 2003

=> s l1 or l3

L4 9341 L1 OR L3

=> s l4 and (resist or photoresist)

L5 18 L4 AND (RESIST OR PHOTORESIST)

=> duplicates remove l5

DUPLICATE PREFERENCE IS 'CAPLUS, HCAPLUS'

KEEP DUPLICATES FROM MORE THAN ONE FILE? Y/(N):n

PROCESSING COMPLETED FOR L5

L6 9 DUPLICATE REMOVE L5 (9 DUPLICATES REMOVED)

=> d l6 1-9 ibib

L6 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2003 ACS

DUPLICATE 1

ACCESSION NUMBER: 2003:272171 CAPLUS  
 DOCUMENT NUMBER: 138:311557  
 TITLE: Negative-working **resist** composition  
 containing alicyclic compound for x-ray and electron  
 beam  
 INVENTOR(S): Takahashi, Omote; Yasunami, Shoichiro; Adegawa, Yutaka  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 94 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003107705	A2	20030409	JP 2001-302633	20010928
PRIORITY APPLN. INFO.:			JP 2001-302633	20010928
OTHER SOURCE(S):		MARPAT 138:311557		

L6 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2  
 ACCESSION NUMBER: 2000:356732 CAPLUS  
 DOCUMENT NUMBER: 133:11005  
 TITLE: Radiation-sensitive resin composition  
 INVENTOR(S): Chiba, Takashi; Kobayashi, Eiichi; Iwanaga, Shinichirou  
 PATENT ASSIGNEE(S): JSR Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000147773	A2	20000526	JP 1998-318802	19981110
PRIORITY APPLN. INFO.:			JP 1998-318802	19981110
OTHER SOURCE(S):		MARPAT 133:11005		

L6 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 3  
 ACCESSION NUMBER: 2000:143347 CAPLUS  
 DOCUMENT NUMBER: 132:201042  
 TITLE: Radiation-sensitive resin composition useful as  
**resist**  
 INVENTOR(S): Chiba, Takashi; Kobayashi, Eiichi; Iwanaga, Shinichiro  
 PATENT ASSIGNEE(S): JSR Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000066382	A2	20000303	JP 1998-236167	19980821
PRIORITY APPLN. INFO.:			JP 1998-236167	19980821

L6 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 4  
 ACCESSION NUMBER: 2000:441519 CAPLUS  
 DOCUMENT NUMBER: 133:81571  
 TITLE: **Photoresist** composition suitable for deep-UV  
 wavelength imaging

INVENTOR(S): Trefonas, Peter, III; Taylor, Gary N.  
PATENT ASSIGNEE(S): Shipley Company LLC, USA  
SOURCE: Eur. Pat. Appl., 14 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1014193	A1	20000628	EP 1999-125625	19991222
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000298348	A2	20001024	JP 1999-376940	19991224
PRIORITY APPLN. INFO.:		US 1998-219468 A 19981223		
REFERENCE COUNT:	6	THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT		

L6 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5  
ACCESSION NUMBER: 1997:140435 CAPLUS  
DOCUMENT NUMBER: 126:144674  
TITLE: Manufacture of carboxyl group- and ethylenic unsaturated group-containing compounds and solder **resists** containing them  
INVENTOR(S): Nakagawa, Sumie; Okazaki, Eiichi; Kato, Hitoshi  
PATENT ASSIGNEE(S): Toa Gosei Kk, Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08301977	A2	19961119	JP 1995-129823	19950428
PRIORITY APPLN. INFO.:		JP 1995-129823 19950428		

L6 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 6  
ACCESSION NUMBER: 1987:487210 CAPLUS  
DOCUMENT NUMBER: 107:87210  
TITLE: Solid photosensitive polymer compositions  
INVENTOR(S): Yokoyama, Yasuaki; Fukuhara, Seiji; Nishiwaki, Koichi; Ikeda, Hiroharu  
PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62023036	A2	19870131	JP 1985-162580	19850723
PRIORITY APPLN. INFO.:		JP 1985-162580 19850723		

L6 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 7  
ACCESSION NUMBER: 1987:487201 CAPLUS  
DOCUMENT NUMBER: 107:87201  
TITLE: Liquid photosensitive polymer compositions  
INVENTOR(S): Yokoyama, Yasuaki; Fukuhara, Seiji; Nishiwaki, Koichi; Ikeda, Hiroharu

PATENT ASSIGNEE(S): Japan Synthetic Rubber Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 61292632	A2	19861223	JP 1985-135135	19850620
PRIORITY APPLN. INFO.:			JP 1985-135135	19850620

L6 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 8  
ACCESSION NUMBER: 1985:176533 CAPLUS  
DOCUMENT NUMBER: 102:176533  
TITLE: Radiation-sensitive organic polymer **resist** material  
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 59198448	A2	19841110	JP 1983-72902	19830427
JP 03080301	B4	19911224		
PRIORITY APPLN. INFO.:			JP 1983-72902	19830427

L6 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 9  
ACCESSION NUMBER: 1983:40606 CAPLUS  
DOCUMENT NUMBER: 98:40606  
TITLE: Antidote for veterinary use to **resist** poisoning with an organophosphate insecticide  
INVENTOR(S): Popa, Ioan; Popescu, Maria; Bulete, Ionel  
PATENT ASSIGNEE(S): Ministerul Apararii Nationale, Rom.  
SOURCE: Rom., 3 pp.  
CODEN: RUXXA3  
DOCUMENT TYPE: Patent  
LANGUAGE: Romanian  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 66509	B	19781030	RO 1973-76056	19730912
PRIORITY APPLN. INFO.:			RO 1973-76056	19730912

in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

=> s sparteine

L1 433 SPARTEINE

=> d

L1 ANSWER 1 OF 433 REGISTRY COPYRIGHT 2003 ACS

RN 439901-24-3 REGISTRY

CN Copper, diazido[(5S,7S,7aR,12S,14S,14aS)-dodecahydro-7,14-methano-2H,6H-dipyrido[1,2-a:1',2'-e][1,5]diazocine-.kappa.N5,.kappa.N12]-, (T-4)- (9CI)  
(CA INDEX NAME)

OTHER NAMES:

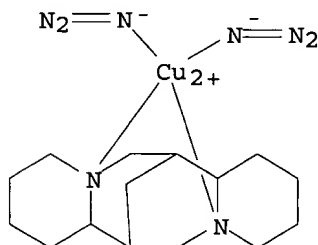
CN Bis(azido-.kappa.N)[(6R,7S,8S,14S)-(-)-sparteine-.kappa.2N,N']copper(II)

MF C15 H26 Cu N8

CI CCS

SR CA

LC STN Files: CA, CAPLUS, CASREACT



2 REFERENCES IN FILE CA (1957 TO DATE)

2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> s sparteine ex sam

SAMPLE IS IGNORED AS A SCOPE FOR THIS SEARCH

433 SPARTEINE

1747 EX

L2 0 SPARTEINE EX

(SPARTEINE(W) EX)

=> d l1 2

L1 ANSWER 2 OF 433 REGISTRY COPYRIGHT 2003 ACS

RN 340167-17-1 REGISTRY

CN Lithium, butyl[(5R,7S,7aR,12R,14S,14aR)-dodecahydro-7,14-methano-2H,6H-dipyrido[1,2-a:1',2'-e][1,5]diazocine-.kappa.N5,.kappa.N12]- (9CI) (CA INDEX NAME)

OTHER NAMES:

CN (-)-.alpha.-Isosparteine-butyllithium

FS STEREOSEARCH

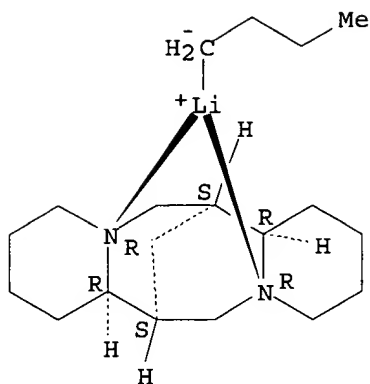
MF C19 H35 Li N2

CI CCS

SR CA

LC STN Files: CA, CAPLUS

Absolute stereochemistry.

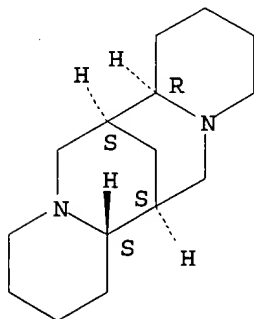


1 REFERENCES IN FILE CA (1957 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1957 TO DATE)

=> d l1 4

L1 ANSWER 4 OF 433 REGISTRY COPYRIGHT 2003 ACS  
RN 250138-49-9 REGISTRY  
CN 7,14-Methano-2H,6H-dipyrido[1,2-a:1',2'-e][1,5]diazocine, dodecahydro-, monohydrobromide, (7S,7aS,14S,14aR)- (9CI) (CA INDEX NAME)  
OTHER NAMES:  
CN (-)-**Sparteine monohydrobromide**  
FS STEREOSEARCH  
MF C15 H26 N2 . Br H  
CI COM  
SR CA  
LC STN Files: CA, CAPLUS  
CRN (90-39-1)

Absolute stereochemistry. Rotation (-).



● HBr

2 REFERENCES IN FILE CA (1957 TO DATE)  
2 REFERENCES IN FILE CAPLUS (1957 TO DATE)

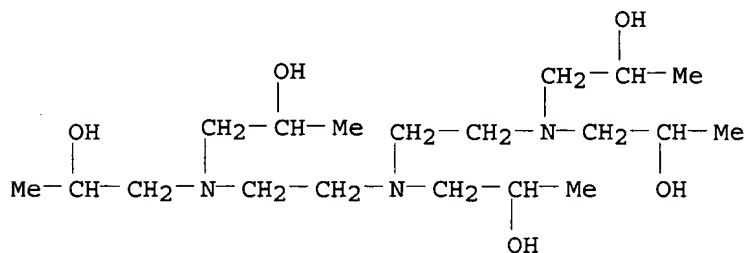
=> s pentrol  
L3 3 PENTROL

=> d 1-3

L3 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2003 ACS  
RN 165724-61-8 REGISTRY  
CN **Pentrol (pentaerythritol by-product) (9CI)** (CA INDEX NAME)  
OTHER NAMES:  
CN **Pentrol**  
ENTE A byproduct from synthesis of pentaerythritol (Russia)  
MF Unspecified  
CI MAN  
SR CA  
LC STN Files: CA, CAPLUS, TOXCENTER

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*  
5 REFERENCES IN FILE CA (1957 TO DATE)  
5 REFERENCES IN FILE CAPLUS (1957 TO DATE)

L3 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2003 ACS  
RN 17121-34-5 REGISTRY  
CN 2-Propanol, 1,1',1'',1'''-[[ (2-hydroxypropyl) imino] bis (2,1-ethanediylnitrilo)] tetrakis- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN 2-Propanol, 1,1',1'',1'''-[[ (2-hydroxypropyl) imino] bis (ethylenenitrilo)] tetra- (8CI)  
CN 2-Propanol, 1-[bis[2-[bis(2-hydroxypropyl) amino] ethyl] amino]- (7CI)  
OTHER NAMES:  
CN 1,1',1'',1'''-[(2-Hydroxypropyl) iminobis (ethylenenitrilo)] tetra-2-propanol  
CN 1,1,4,7,7-Pentakis (2-hydroxypropyl) -1,4,7-triazaheptane  
CN N,N,N',N'-Pentakis (2-hydroxypropyl) diethylenetriamine  
CN **Pentrol**  
FS 3D CONCORD  
MF C19 H43 N3 O5  
CI COM  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CHEMCATS, CHEMLIST, CSCHEM, IFICDB, IFIPAT, IFIUDB, TOXCENTER, USPATFULL  
(\*File contains numerically searchable property data)  
Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*  
(\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

24 REFERENCES IN FILE CA (1957 TO DATE)  
3 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
24 REFERENCES IN FILE CAPLUS (1957 TO DATE)  
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2003 ACS  
RN 54-95-5 REGISTRY  
CN 5H-Tetrazolo[1,5-a]azepine, 6,7,8,9-tetrahydro- (8CI, 9CI) (CA INDEX

NAME)

OTHER NAMES:

CN .alpha.,.beta.-Cyclopentamethylenetetrazole  
CN 1,2,3,3a-Tetrazacyclohepta-8a,2-cyclopentadiene  
CN 1,5-Pentamethylenetetrazole  
CN 6,7,8,9-Tetrahydro-5H-tetrazoloazepine  
CN 7,8,9,10-Tetrazabicyclo[5.3.0]-8,10-decadiene  
CN Angiazol  
CN Cardiazol  
CN Cardiazole  
CN Cardiol  
CN Cenalene M  
CN Cenazol  
CN Cerebro-nicin  
CN Coranormal  
CN Coranormol  
CN Corasol  
CN Corazol  
CN Corazole  
CN Corazole (analeptic)  
CN Corisan  
CN Corsedrol  
CN Cortis  
CN Corvasol  
CN Delzol W  
CN Deumacard  
CN Gewazol  
CN Korazol  
CN Korazole  
CN Leptazol  
CN Leptazole  
CN Metrazol  
CN Metrazole  
CN Pentamethylenetetrazole  
CN Pentazol  
CN Pentetrazol  
CN Pentetrazole  
CN Pentrazol  
CN **Pentrolone**  
CN Pentrozol  
CN Pentylenetetrazol  
CN Pentylenetetrazole  
CN Phrenazol  
CN PTZ  
CN Tetracor  
CN Tetrazol  
CN Tetrazole, (1,5-pentanediy1)-  
CN Ventrazol  
CN Yetrazol  
FS 3D CONCORD  
MF C6 H10 N4  
CI COM  
LC

STN Files: ADISNEWS, AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CEN, CHEMCATS,  
CHEMINFORMRX, CHEMLIST, CIN, CSCHM, DDFU, DETHERM\*, DIOGENES, DRUGU,  
EMBASE, GMELIN\*, HODOC\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*,  
MSDS-OHS, NIOSHTIC, PHARMASEARCH, PROMT, RTECS\*, SPECINFO, TOXCENTER,  
USAN, USPAT2, USPATFULL, VETU

(\*File contains numerically searchable property data)

Other Sources: EINECS\*\*, NDSL\*\*, TSCA\*\*, WHO

(\*\*Enter CHEMLIST File for up-to-date regulatory information)



=> d 117 1-48 ibib abs

L17 ANSWER 1 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 1  
ACCESSION NUMBER: 2003:200566 CAPLUS  
DOCUMENT NUMBER: 138:245598  
TITLE: Negative-working chemically amplified electron beam or  
x-ray **resist** composition with controlled  
water content  
INVENTOR(S): Adegawa, Yutaka  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 82 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003076020	A2	20030314	JP 2001-271992	20010907
PRIORITY APPLN. INFO.:			JP 2001-271992	20010907

AB The title compn. contains an electron beam- or x-ray-sensitive  
**acid generator**, an alkali solubilizable **resin**,  
an acid-sensitive crosslinking agent, and an org. basic compd., wherein  
the water content in the compn. is  $\geq 0.5\%$ . The compn. provides the  
**resist** of high resoln. and high evenness on the line width and is  
suitable for use for semiconductor device fabrication.

L17 ANSWER 2 OF 48 USPATFULL  
ACCESSION NUMBER: 2003:51058 USPATFULL  
TITLE: **Resist** with reduced line edge roughness  
INVENTOR(S): Fedynyshyn, Theodore H., Sudbury, MA, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2003036015	A1	20030220
APPLICATION INFO.:	US 2001-851952	A1	20010509 (9) 5/9/01
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	APPLICATION		
LEGAL REPRESENTATIVE.:	NUTTER MCCLENNEN & FISH LLP, WORLD TRADE CENTER WEST, 155 SEAPORT BOULEVARD, BOSTON, MA, 02210-2604		
NUMBER OF CLAIMS:	49		
EXEMPLARY CLAIM:	1		
LINE COUNT:	1225		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel **photoresists** containing at least about 0.2 molar ratio  
of a base with respect to the concentration of a **photoacid**  
**generator** present and their preparation are described. It has  
been discovered that inclusion of a sufficient amount of base  
counteracts the detrimental effects of **photoacid**  
**generators**, thus providing **resists** having submicron  
linewidth resolution.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 3 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 2  
ACCESSION NUMBER: 2002:869230 CAPLUS  
DOCUMENT NUMBER: 137:377442  
TITLE: **Photoresist** with reduced line edge roughness  
INVENTOR(S): Fedynyshyn, Theodore H.  
PATENT ASSIGNEE(S): Massachusetts Institute of Technology, USA  
SOURCE: PCT Int. Appl., 35 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002091084	A2	20021114	WO 2002-US14671	20020509
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
US 2003036015	A1	20030220	US 2001-851952	20010509

PRIORITY APPLN. INFO.: US 2001-851952 A 20010509

AB Novel **photoresists** contg. at least about 0.2 molar ratio of a base with respect to the concn. of a **photoacid generator** are disclosed and their prepn. are described. It has been discovered that inclusion of a sufficient amt. of base counteracts the detrimental effects of **photoacid generators**, thus providing **resists** having submicron linewidth resoln.

L17 ANSWER 4 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 3

ACCESSION NUMBER: 2002:978378 CAPLUS

DOCUMENT NUMBER: 138:63823

TITLE: **Photoresist** compositions comprising silyl ketals and methods of use thereof

INVENTOR(S): Huang, Wu-song; Medeiros, David R.

PATENT ASSIGNEE(S): International Business Machines Corporation, USA

SOURCE: U.S. Pat. Appl. Publ., 10 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002197556	A1	20021226	US 2001-882234	20010615

PRIORITY APPLN. INFO.: US 2001-882234 20010615

AB A chem. amplified **resist** compn. comprises an aq. base sol. polymer or copolymer having one or more polar functional groups, wherein at least one of the functional groups is protected with a silyl ketal group but may also include other protecting groups as well as unprotected acidic functionalities. A ratio of protected to unprotected acidic functionalities is preferably selected to most effectively modulate a soly. of the **resist** compn. in an aq. base or other developer. The **resist** compn. further comprises an **acid generator**, preferably a **photoacid generator** (PAG), and a casting solvent, and may also include other components, such as, a base additive and/or surfactant.

L17 ANSWER 5 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 4

ACCESSION NUMBER: 2002:327849 CAPLUS

DOCUMENT NUMBER: 136:348308

TITLE: Polymers and positive-acting **photoresist** compositions comprising same

INVENTOR(S): Trefonas, Peter, III; Taylor, Gary N.; Barclay, George G.

PATENT ASSIGNEE(S): Shipley Company, L.L.C., USA  
SOURCE: U.S., 11 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6379861	B1	20020430	US 2000-510069	20000222
PRIORITY APPLN. INFO.:			US 2000-510069	20000222

AB The present invention provides novel polymers and **photoresist** compns. that comprise the polymers as a **resin binder** component in chem.-amplified, pos.-acting **resists**. The **photoresist** compns. of the invention can provide highly resolved relief images upon exposure to short wavelengths, including 193 nm and 248 nm. The **resists** of the invention are also useful for imaging at other wavelengths such as 365 nm. Polymers of the invention include those that comprise a photogenerated acid-labile unit that is ester group that comprises an alkyl moiety having .apprx.5 or more C atoms and .gtoreq.2 secondary, tertiary or quaternary C atoms. The alkyl moiety of the ester group can be a noncyclic or single ring alicyclic group. The carboxyl (C=O(O)) O of the ester group is often preferably directly bonded to a quaternary C atom.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 6 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 5  
ACCESSION NUMBER: 2002:848227 CAPLUS  
DOCUMENT NUMBER: 137:360309  
TITLE: Radiation-sensitive positive **resist** compositions showing wide defocus latitude and less particle generation on storage  
INVENTOR(S): Kodama, Kunihiro; Sato, Kenichiro  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 90 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 4  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002323767	A2	20021108	JP 2001-157366	20010525
US 2003017415	A1	20030123	US 2002-79414	20020222
PRIORITY APPLN. INFO.:			JP 2001-48602	A 20010223
			JP 2001-48783	A 20010223
			JP 2001-48784	A 20010223
			JP 2001-48880	A 20010223
			JP 2001-157366	A 20010525
			JP 2001-157367	A 20010525

AB The compns., esp. suited for deep-UV lithog., comprise **acid generators** contg. triarylsulfonium salts and phenathylsulfonium salts, alicyclic hydrocarbon **resins** increasing alkali soly. upon reaction with acids, bases, and fluoro and/or silicone surfactants,. The compns. may contain OH-bearing and -free solvent mixts.

L17 ANSWER 7 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 6  
ACCESSION NUMBER: 2002:734115 CAPLUS  
DOCUMENT NUMBER: 137:270526  
TITLE: Positive-working **photoresists** with high sensitivity and good resolution on development

INVENTOR(S): Fujimori, Toru; Takita, Satoshi; Itabashi, Hideyuki  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan; Fujifilm Arch K. K.  
 SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002278071	A2	20020927	JP 2001-81164	20010321
PRIORITY APPLN. INFO.:			JP 2001-81164	20010321

OTHER SOURCE(S): MARPAT 137:270526

AB The compns. contain (A) radiation-induced acid-generating compds., (B) **resins** having mono- or polyalicyclic hydrocarbyl structure and being decomposable by acid to become dissolvable in alkali developing soln., and (C) an arom. carboxylic acid with protective group. Thus, adding over 4 h a soln. of 2-methyl-2-adamantyl methacrylate 5.0, mevalonic lactone methacrylate 4.23, V-65 (azo radical initiator) 0.534 and AcNMe2 30.0 to AcNMe2 7.0 g heated at 60.degree., reacting for 2 h, further adding 0.267 V-650, reacting for 2 h and working up gave a copolymer with Mw 5500 and Mw/Mn 1.9. Mixing 9.0 parts the copolymer with triphenylsulfonium triflate 0.1, tetrahydro-2-pyranyl benzoate 1.0, 1,5-diazabicyclo[4.3.0]-5-nonene 0.005 and Megafac F 176 (surfactant) 0.01 parts, dilg. in propylene glycol monomethyl ether acetate to a solids content of 15%, filtering, spin coating on a silane-primed Si wafer, and drying at 120.degree. for 90 s gave a **photoresist** layer which was then patterned using a photomask and ArF excimer laser stepper and developed with tetramethylammonium hydroxide to give patterns with good resolu.

L17 ANSWER 8 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 7  
 ACCESSION NUMBER: 2002:734102 CAPLUS  
 DOCUMENT NUMBER: 137:270516  
 TITLE: Positive-working electron-beam or x-ray **resist** composition  
 INVENTOR(S): Adegawa, Yutaka; Nakamura, Ippel  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 72 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002278052	A2	20020927	JP 2001-76688	20010316
US 2003039916	A1	20030227	US 2002-62497	20020205
PRIORITY APPLN. INFO.:			JP 2001-28336 A	20010205
			JP 2001-76688 A	20010316

OTHER SOURCE(S): MARPAT 137:270516

AB The **resist** compn. contains a **photoacid generator** generating an acid upon irradiation with electron beam or x ray, a cyclic ether, and an org. basic compd. The compn. shows high sensitivity and high PBD (post bake delay) stability and provides sharp-edge pattern profile.

L17 ANSWER 9 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 8  
 ACCESSION NUMBER: 2002:553401 CAPLUS  
 DOCUMENT NUMBER: 137:132096  
 TITLE: Positive-working **photoresist** composition containing alkylene glycol alkyl ether

INVENTOR(S): Fujimori, Toru; Nakao, Hajime  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002207289	A2	20020726	JP 2001-2860	20010110
PRIORITY APPLN. INFO.:			JP 2001-2860	20010110

OTHER SOURCE(S): MARPAT 137:132096

AB The compn. contains (A) a compd. generating an acid by actinic ray or radiation, (B) a **resin** with mono- or poly-cyclic aliph. hydrocarbon structure and its soly. to alk. developer increases by the action of an acid, and (C) R1(OX)mOR2 (R1-2 = linear, branched, or cyclic alkyl; X = linear, branched, or cyclic alkylene; m, l = 1-9). The compn. contains (A), (C), (D) dissoln. inhibitor with mol. wt.  $\leq 3000$  having acid-decomposable group and whose soly. to an alk. developer increases by the action of an acid., and (E) a **resin** insol. in water and sol. in an alk. developer. The compn. shows high sensitivity, resoln. and generation of const. wave on **resist** surface is prevented.

L17 ANSWER 10 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 9

ACCESSION NUMBER: 2002:364226 CAPLUS

DOCUMENT NUMBER: 136:393267

TITLE: Positive-working **resist** compositions with high sensitivity and resolution

INVENTOR(S): Fujimori, Toru; Tan, Shiro; Nakao, Hajime

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002139839	A2	20020517	JP 2000-332955	20001031
PRIORITY APPLN. INFO.:			JP 2000-332955	20001031

OTHER SOURCE(S): MARPAT 136:393267

AB The compns. contain **photoacid generators** (A), polymers (B) having alicyclic hydrocarbon structures in the main or side chains and good soly. in alkali developing agents by acid-induced decompn., and compds. (C) shown as RXC:OOH (R = F-contg. hydrocarbyl; X = F-free divalent linking group). The compns., useful for microphotofabrication using ArF excimer laser in semiconductor device fabrication, give **resist** patterns with good pattern profiles and reduced standing wave effect.

L17 ANSWER 11 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 10

ACCESSION NUMBER: 2002:364224 CAPLUS

DOCUMENT NUMBER: 136:393265

TITLE: Chemically-amplified negative-working **resist** compositions containing radical generators

INVENTOR(S): Adegawa, Yutaka

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 83 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

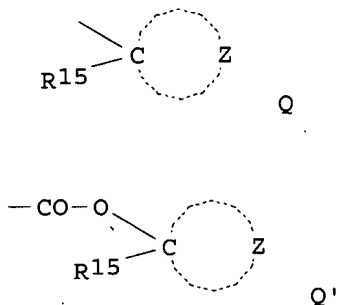
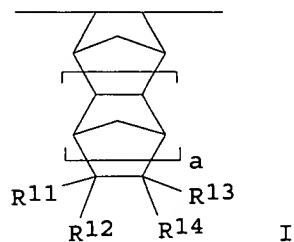
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002139836	A2	20020517	JP 2000-336334	20001102
PRIORITY APPLN. INFO.:			JP 2000-336334	20001102

AB The compns., which show high sensitivity, high resoln., rectangular pattern profile, and PCD (post coating delay) and PED (post exposure delay) stability, contain (a) compds. which directly or indirectly generate radicals upon irradiation with energy ray. The compns. may contain (b) compds. which generate acids upon irradiation with energy ray, (c) alkali-sol. **resins**, and (d) crosslinking agents reacting by acids.

L17 ANSWER 12 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 11  
 ACCESSION NUMBER: 2002:347848 CAPLUS  
 DOCUMENT NUMBER: 136:361828  
 TITLE: Positive-working **photoresist** compositions containing norbornene-acrylate copolymers  
 INVENTOR(S): Sato, Kenichiro; Nakao, Hajime  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 80 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131917	A2	20020509	JP 2001-169802	20010605
PRIORITY APPLN. INFO.:			JP 2000-174037	A 20000609
			JP 2000-186431	A 20000621
			JP 2000-206812	A 20000707
			JP 2000-206890	A 20000707
			JP 2000-211414	A 20000712
			JP 2000-215441	A 20000717
			JP 2000-248658	A 20000818

OTHER SOURCE(S): MARPAT 136:361828  
 GI



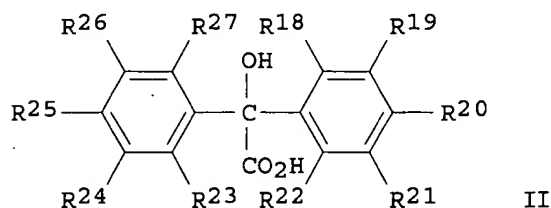
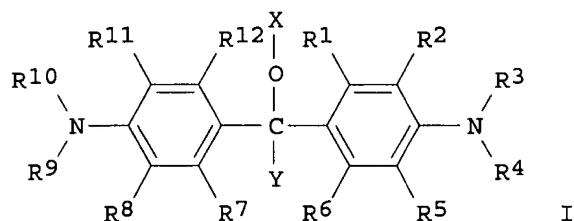
AB The compns., which show wide defocus latitude, reduced line edge roughness, and high resoln., contain (A) **resin** which increases its soly. in alk. developers upon reaction of acids and contain (a) a repeating unit I [R11-R14 = H, (un)substituted alkyl; a = 0, 1] and (b) CH<sub>2</sub>CR1(ACO<sub>2</sub>W) (R1 = H, Me; A = direct bond, alkylene, cycloalkylene, O, ether group, thioether group, O, ester group; W = Q, CR16R17R18,

CHR200R19, CR23R25CR21:CR22R24, R26R29CHR27COR28, Q1; R15 = Me, Et, Pr, CHMe2, Bu, CH2CMe2, CHMeEt; Z = at. group required to form an alicyclic ring; R16-R20 = C1-4 linear or branched alkyl, alicyclyl; .gtoreq.1 of R16-R18, R19 or R20 = alicyclyl; R21-R25 = H, C1-4 linear or branched alkyl, alicyclyl; .gtoreq.1 R21-R25 = alicyclyl; R23 or R25 = C1-4 linear or branched alkyl, alicyclyl; R26-R29 = C1-4 linear or branched alkyl, alicyclyl; .gtoreq.1 of R26-R29 = alicyclyl), (B) compds. which generate acids upon irradiation of actinic ray or radiation, and optionally (C1) R[X(CR51CR52)qCO2R1]n (X = O, S, NR53, direct bond, R53 = H, alkyl; CO2R1 = acid-decomposable group; R = n-valent bridged hydrocarbon ring, satd. cyclic hydrocarbon ring, naphthalene ring; n = 1-4; q = 0-10), (C2) naphthalene derivs. II (R60 = alkyl, halo; OR61 = acid-decomposable group; m = 0-4; p = 1-4), or (C3) steroid compds. which contain .gtoreq.2 substituents having .gtoreq.1 carboxyl group protected with acid-labile group. The **acid generators** may be imide sulfonate compds. or diazodisulfonic acids (Markush structures are given) and optionally sulfonium salts. (C1)-(C3) work as dissoln. inhibitors and the compns. give high-resoln. contact hole and trench patterns in fabrication of semiconductor devices.

L17 ANSWER 13 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 12  
 ACCESSION NUMBER: 2002:347846 CAPLUS  
 DOCUMENT NUMBER: 136:361827  
 TITLE: Positive-working **photoresist** composition suitable for ArF excimer laser exposure  
 INVENTOR(S): Kawabe, Yasumasa  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131914	A2	20020509	JP 2000-327358	20001026
PRIORITY APPLN. INFO.:			JP 2000-327358	20001026
OTHER SOURCE(S):		MARPAT 136:361827		

GI



AB A pos.-working chem. amplification **photoresist** compn. comprises (A) a cycloaliph. polymer capable of becoming alk.-sol. upon acid-induced decompn., (B) a **photoacid generator**(s) capable of releasing acid upon ltoreq.220 nm light irradi., (C) a compd. represented by I (R1-2, R5-8, R11-12 = H, OH, halo, C1-4-alkyl, C1-4-alkoxy; R3-4, R9-10 = C1-4-alkyl; X = H; X joining together with R1 may form ring; Y = H, Ph, substituted phenyl) or II (R18-27 = H, OH, halo, C1-4-alkyl, C1-4-alkoxy; R22 joining together with R23 may form ring), and (D) a fluoro- and/or silicone-surfactant(s), and optionally (E) an acid trapping agent. The **photoresist** compn. may contain a low mol. wt. compd. having an acid decomposable group and a group capable of becoming alk.-sol. upon contact with an acid. The **photoresist** compn. shows improved line edge roughness and is suitable for semiconductor device fabrications by ArF excimer lasers.

L17 ANSWER 14 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 13  
ACCESSION NUMBER: 2002:345226 CAPLUS  
DOCUMENT NUMBER: 136:361820  
TITLE: Chemically amplified positive photosensitive polymer compositions for **resists** with high resolution  
INVENTOR(S): Kawabe, Yasumasa  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 22 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131913	A2	20020509	JP 2000-327357	20001026
PRIORITY APPLN. INFO.: OTHER SOURCE(S):		MARPAT 136:361820	JP 2000-327357	20001026

AB The compns., useful for semiconductor device fabrication, printed circuit board manuf., etc., comprise (A) polymers having alicyclic hydrocarbon blocks, which become alkali-sol. by acid decompn., (B) radiation-sensitive **acid generators**, (C) XCR1OHCR2OHY or X(C:NOH)2Y (R1, R2 = H, C1-4-alkyl, Ph; R3, R4 = halo, C1-4-alkyl, trifluoromethyl; X = C6H5-1R31; Y = C6H5-mR4m; 1, m = 0-3), and (D) fluoro and/or silicone surfactants. The **resist** compns. are sensitive to ArF excimer laser beams.

L17 ANSWER 15 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 14  
ACCESSION NUMBER: 2002:349275 CAPLUS  
DOCUMENT NUMBER: 136:377476  
TITLE: Chemically amplified positive-working **photoresist** compositions for excimer laser development with high sensitivity and resolution  
INVENTOR(S): Fujimori, Toru; Tan, Shiro; Nakao, Hajime  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

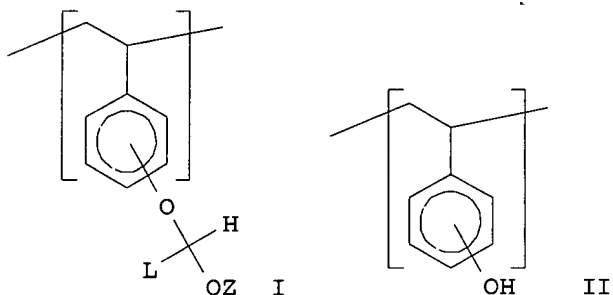
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131910	A2	20020509	JP 2000-325915	20001025
PRIORITY APPLN. INFO.:			JP 2000-325915	20001025



AB The compns. comprise (A) **photoacid generators**, (B) **resins** having alicyclic hydrocarbon structures, which are decompd. by acids to increase their alkali-soly., and (C) RWC02B (R = alkyl, alicyclic ring-contg. group; W = divalent org. group; B = acid-decomposable group). The **photoresists** are useful for micro-photofabrication by far UV radiation at .ltoreq.250 nm wavelength.

L17 ANSWER 16 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 15  
 ACCESSION NUMBER: 2002:176284 CAPLUS  
 DOCUMENT NUMBER: 136:239101  
 TITLE: Positive-working **photoresist** compositions containing carboxy-terminated fluorine-containing polyethers  
 INVENTOR(S): Kawabe, Yasumasa; Kanna, Shinichi  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002072482	A2	20020312	JP 2000-265558	20000901
PRIORITY APPLN. INFO.: GI			JP 2000-265558	20000901



AB The compn. contains (A) **photoacid generators**, (B) polymers insol. or hardly sol. in alkali but become alkali-sol. by treatment with acids, and (C) carboxylic acid derivs. having mol. wt. .ltoreq.1000 and having partial structure (CR22)nO(CR12)mCO2H (R1 = H, F, CF3; R2 = H, F, CF3, OR3; R3 = C1-4 alkyl, fluoroalkyl; m, n = integer of 1-3; R1 and/or R2 contain F). Preferably, component B contains structural repeating units I and II (L = H, (un)substituted linear, branched, or cyclic alkyl, (un)substituted aralkyl; Z = (un)substituted linear, branched, or cyclic alkyl, (un)substituted aralkyl; Z + L may form 5- or 6-membered ring). The compns. may also contain N-contg. basic compds. and fluoro- and/or Si-contg. surfactants. Formation of defects on development is prevented. The compns. are suitable in fabrication of semiconductor devices.

L17 ANSWER 17 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 16  
 ACCESSION NUMBER: 2002:176283 CAPLUS  
 DOCUMENT NUMBER: 136:239100  
 TITLE: Positively working **photoresist** composition for suppression of development defect  
 INVENTOR(S): Kawabe, Yasumasa  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002072481	A2	20020312	JP 2000-265557	20000901

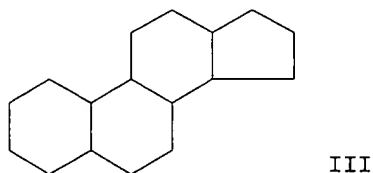
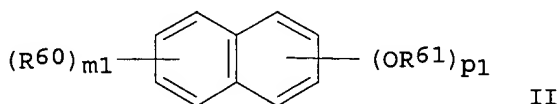
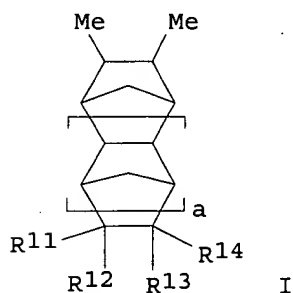
PRIORITY APPLN. INFO.: JP 2000-265557 20000901

AB The compn. comprises (A) polymer with alicyclic hydrocarbon structure which becomes alkali sol. by acid decompn., (B) **acid generator** sensitive to actinic ray or radiation, (C) C4-20 aliph. (di)carboxylic acid including .gtoreq.4 F atoms per mol. and having mol. wt. .ltoreq.1000, (D) N-contg. basic compd., and (E) F- and/or Si-contg. surfactant. The compn. has high sensitivity, and defect-free **resist** patterns with high size accuracy, resoln., and low line edge roughness can be formed.

L17 ANSWER 18 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 17  
 ACCESSION NUMBER: 2002:119603 CAPLUS  
 DOCUMENT NUMBER: 136:191685  
 TITLE: Positively working **photoresist** composition for far-ultraviolet exposure  
 INVENTOR(S): Nakao, Hajime; Sato, Kenichiro  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 55 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002049154	A2	20020215	JP 2000-233146	20000801

PRIORITY APPLN. INFO.: JP 2000-233146 20000801  
 OTHER SOURCE(S): MARPAT 136:191685  
 GI



AB The compn., useful for ultramicroolithog. process in fabrication of ultra-large-scale integrated circuits (ULSI), contains (A) polymers having

alicyclic repeating unit I [R11-R14 = H, (substituted) alkyl; a = 0, 1] and [CH2CR(ACO2W)] unit [R1 = H, Me; A = none, alkylene, cycloalkylene, O, S, CO, and/or ester; W = CRaRbRc, CHRdORE; Ra-Rc, Re = (halo-, alkoxy-, alkoxy-carbonyl, acyl-, or acyloxy-substituted) C1-20 linear or branched alkyl, C3-20 cycloalkyl; Ra and Rb may form an alicyclic ring; Rd = H, alkyl] to increase alkali developability by acids, (B) **photoacid generators**, and (C) R[X(CR51R52)qCO2R']n (II; X = O, S, NR53, none; R51-R53 = H, alkyl; R' = acid-degradable group as CO2R'; R = bridged hydrocarbon, satd. alicyclic compd., naphthalene-contg. n-valent residue; n = 1-4; q = 0-10), naphthalene derivs. III (R60 = alkyl, halo; R61 = acid-degradable group as OR61; m = 0-4; p = 1-4), or a cholic acid deriv. having structure IV substituted with .gtoreq.2 groups having .gtoreq.1 substituent contg. carboxyl group protected with acid-unstable group. The compds. II-IV work as dissoln. inhibitors and the compn. gives high-resoln. contact hole and trench patterns in fabrication of semiconductor devices.

L17 ANSWER 19 OF 48 USPATFULL

ACCESSION NUMBER: 2002:16787 USPATFULL  
 TITLE: Positive **photoresist** composition  
 INVENTOR(S): Sato, Kenichiro, Shizuoka, JAPAN  
 Aoi, Toshiaki, Shizuoka, JAPAN

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002009666	A1	20020124
APPLICATION INFO.:	US 2001-834639	A1	20010416 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 2000-115497	20000417
	JP 2000-215574	20000717
	JP 2000-231670	20000731
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	APPLICATION	
LEGAL REPRESENTATIVE:	SUGHRUE, MION, ZINN, MACPEAK & SEAS, PLLC, 2100 Pennsylvania Avenue, N.W., Washington, DC, 20037	
NUMBER OF CLAIMS:	18	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1642	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Provided is a positive **photoresist** composition comprising a **resin** which contains specific repeating units and whose dissolving rate toward an alkaline developing solution is increased by the action of an acid and a compound which generates an acid upon irradiation with an actinic ray or a radiation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 20 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 18

ACCESSION NUMBER: 2002:669862 CAPLUS  
 DOCUMENT NUMBER: 137:343818  
 TITLE: The Multifunctional Role of Base Quenchers in Chemically Amplified **Photoresists**  
 AUTHOR(S): Pawloski, Adam R.; Christian; Nealey, Paul F.  
 CORPORATE SOURCE: Center for Nanotechnology and Department of Chemical Engineering, University of Wisconsin, Madison, WI, 53706, USA  
 SOURCE: Chemistry of Materials (2002), 14(10), 4192-4201  
 CODEN: CMATEX; ISSN: 0897-4756  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A systematic investigation of four base quenchers in chem. amplified

**photoresist** revealed that the role of the base quencher is more complex than rapid, stoichiometric neutralization of photoacid. The base quenchers studied included common supplements to chem. amplified **photoresist**, 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU), 1-piperidineethanol (1PE), and tetrabutylammonium hydroxide (TBAH), and an atm. contaminant and poison to chem. amplified **resists**, N-Me pyrrolidinone (NMP). Acid-base neutralization, deprotection, and development processes in formulations with and without base quencher were evaluated to det. the effects of the base quencher on **resist** processing. The extent of deprotection of the polymer was measured by IR spectroscopy and analyzed as a function of the concn. of photoacid within the **resist**. The concn. of photoacid after exposure was detd. using a std. addn. technique that quantified the efficiency of photoacid generation. Dissoln. rates were measured as a function of the extent of deprotection, and the induction time during development was measured as a function of the **resist** dissoln. rate. Some base quenchers were found (i) to neutralize photoacid in the **resist** with less than stoichiometric proportions, (ii) to act as dissoln. inhibitors or promoters, and (iii) to lengthen the induction time during development. These results show that base quenchers act in considerably more complex ways than the stoichiometric neutralization of photogenerated acid, and understanding these multifunctional characteristics is important for the design of improved **resist** systems for high-resoln. lithog.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 21 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 19

ACCESSION NUMBER: 2001:726601 CAPLUS

DOCUMENT NUMBER: 135:280511

TITLE: Positive-working **photoresist** compositions showing high resolution and high sensitivity and excellent storage stability

INVENTOR(S): Sato, Kenichiro

PATENT ASSIGNEE(S): Fujii Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 62 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001272784	A2	20011005	JP 2000-385724	20001219
PRIORITY APPLN. INFO.:			JP 1999-363302	A 19991221
			JP 2000-10773	A 20000119
			JP 2000-10774	A 20000119

OTHER SOURCE(S): MARPAT 135:280511

AB The compns. contain (A) compds. generating acid on irradiation of actinic ray or radiation, (B) polymers contg. structural repeating unit CO<sub>2</sub>CR<sub>1</sub>R<sub>2</sub>(CR<sub>3</sub>R<sub>4</sub>)<sub>m</sub>SiR<sub>5</sub>R<sub>6</sub>R<sub>7</sub> (R<sub>1</sub>-2 = (cyclic) alkyl; R<sub>3</sub>-4 = H, (cyclic) alkyl; R<sub>1</sub> + R<sub>2</sub>, R<sub>3</sub> + R<sub>4</sub> may form cyclic alkyl; R<sub>5</sub>-7 = (cyclic) alkyl, aryl, trialkylsilyl(oxy); m = integer of 1-6 and increasing soly. in alk. developing agents by reaction with acids, (C) org. basic compds., and (D) .gtoreq.1 of F-contg. surfactants, Si-contg. surfactants, and nonionic surfactants. Preferable structural repeating units also contained in the polymers are given in Markush. Also claimed are (1) compns. consisting of (A') acid-generating sulfonium salts Rs<sub>1</sub>S<sup>+</sup> Rs<sub>2</sub>Rs<sub>3</sub> Z<sup>-</sup> (Rs<sub>1</sub>-3 = (un)substituted alkyl or aryl; Rs<sub>1</sub> + Rs<sub>2</sub> may bond via single bond or bonding group; Z<sup>-</sup> = anion) and polymers B and (2) compns. consisting of **acid generators** A, polymers B, and certain surfactants given in the document. The compns. are useful in manuf. of semiconductor devices, printed circuits, liq. crystal panels, etc.

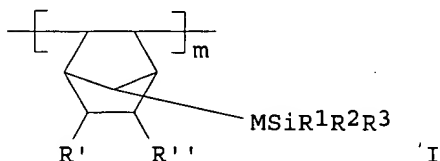
L17 ANSWER 22 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 20  
 ACCESSION NUMBER: 2001:595544 CAPLUS  
 DOCUMENT NUMBER: 135:187705  
 TITLE: Positive-working **photoresist** composition for  
 excimer layer  
 INVENTOR(S): Kawabe, Yasumasa; Yamanaka, Tsukasa  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 38 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001222110	A2	20010817	JP 2000-33621	20000210
PRIORITY APPLN. INFO.: JP 2000-33621			20000210	

AB The pos. **photoresist** compn. contains (A) a compd. generating acid by the irradiation of actinic ray or radiation, (B) a **resin** which is insol. or slightly sol. in alkali and becomes sol. in alkali by the action of an acid, (C) a carboxylic anhydride with mol. wt.  $\leq 1000$ , (D) N-contg. basic compd., and (E) a fluorosurfactant and/or a silicone surfactant. The **resist** compn. is useful for KrF excimer laser irradiation, gives clear patterns without defect, and useful for semiconductor device manufacture.

L17 ANSWER 23 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 21  
 ACCESSION NUMBER: 2001:541847 CAPLUS  
 DOCUMENT NUMBER: 135:129575  
 TITLE: Positive **photoresist** compositions containing  
 norbornene polymers bearing silicon-containing  
 branches  
 INVENTOR(S): Mizutani, Kazuyoshi  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 42 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001201860	A2	20010727	JP 2000-8042	20000117
PRIORITY APPLN. INFO.: GI			JP 2000-8042 20000117	

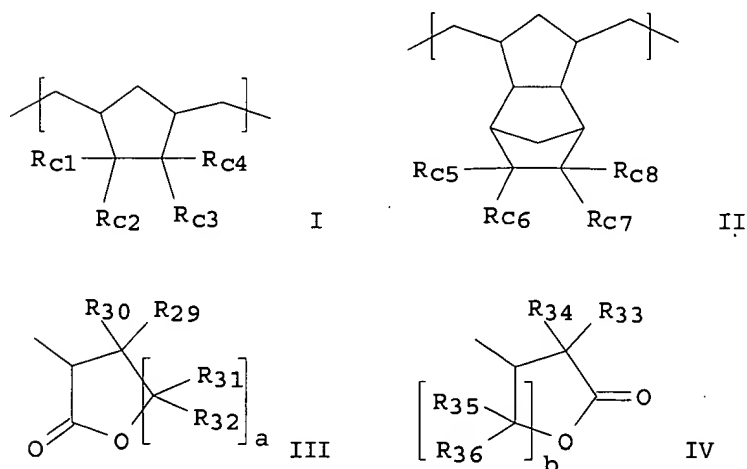


AB The pos. **photoresist** compns. contain polymers containing repeating units bearing groups forming acid groups by acidolysis and repeating units shown as I (R1-3 = alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy; M = single bond, divalent linkage; R', R'' = H, trialkylmethylsilyl, trialkylmethylsilylmethyl, Cl2Si, trialkoxysilyl, dialkoxymethylsilyl, COA; A = OH, OB, NHB; B = alkyl; R' and R'' may be

linked together via alkylene, CO<sub>2</sub>CO, CONR'''CO and thereby form ring; R' and R'' may be united, form alkylene, CO<sub>2</sub>CO, CONR'''CO and thereby form ring; R''' = H, OH, alkyl, OSO<sub>2</sub>R''''; R'''' = alkyl, trihalomethyl). The acid group-forming repeating units may be CH<sub>2</sub>CY(LCO<sub>2</sub>Q) (Y = H, Me, CN, Cl; L = single bond, divalent linkage; Q = H, group forming CO<sub>2</sub>H by acidolysis) or CH[C(O)X<sub>2</sub>L<sub>2</sub>A<sub>2</sub>]CH[C(O)X<sub>1</sub>L<sub>1</sub>A<sub>1</sub>] (X<sub>1</sub>, X<sub>2</sub> = O, S, NH, NHSO<sub>2</sub>; L<sub>1</sub>, L<sub>2</sub> = single bond, divalent linkage; A<sub>1</sub> = Q, CO<sub>2</sub>Q; when X<sub>1</sub> = O and L<sub>1</sub> = single bond, A<sub>1</sub> = Q; A<sub>2</sub> = H, CN, OH, CO<sub>2</sub>H, CO<sub>2</sub>R', COCNHR'', alkyl, cyclic hydrocarbyl, alkoxy, CO<sub>2</sub>Q; R', R'' = alkyl; Q = H, group forming CO<sub>2</sub>H by acidolysis). The polymers may contain repeating units derived from maleic anhydride or (N-substituted) maleimides. Preferably, the compns. comprise (A) the above-mentioned polymers, (B) actinic light- or radiation-sensitive **acid generators**, (C) org. solvents, and optionally (D) org. bases, and (E) surfactants. The compns. have high sensitivity yet high resoln., give rectangular patterns with reduced edge roughness of line patterns, and suppressed pattern shifts on pattern transfer to the lower **resist** layers in O plasma etching process and are suitable for upper layers for bilayered **resists**. Their pattern formation using ArF excimer laser was exemplified.

L17 ANSWER 24 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 22  
 ACCESSION NUMBER: 2001:541843 CAPLUS  
 DOCUMENT NUMBER: 135:129573  
 TITLE: Deep UV positive **photoresist** compositions containing norbornene- or dicyclopentadiene-based polymers  
 INVENTOR(S): Mizutani, Kazuyoshi  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 30 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001201855	A2	20010727	JP 2000-8239	20000117
PRIORITY APPLN. INFO.: GI			JP 2000-8239	20000117



AB The **photoresist** compns. contain (A) active light- or radiation-sensitive **acid generators** and (B) **resins** whose solubilities into alk. solns. are increased by acidolysis and which involve repeating units norbornene derivs. I and/or dicyclopentadiene derivs. II [Rc1-Rc8 = H, (substituted) alkyl, (substituted) cyclohydrocarbyl, halo, cyano, CO<sub>2</sub>H, C(O)YARc9, C(O)YACO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>, CO<sub>2</sub>Rc11, CO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>; .gtoreq.1 of Rc1-Rc4 = C(O)YACO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub> or CO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>; .gtoreq.1 of Rc5-Rc8 = C(O)YACO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub> or CO<sub>2</sub>(CH<sub>2</sub>)<sub>2</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub>; R1-R3 = alkyl, trialkylsilyl, trialkylsilyloxy; Y = O, S, NH, NHSO<sub>2</sub>, NHSO<sub>2</sub>NH; Rc9 = CO<sub>2</sub>H, CO<sub>2</sub>Rc10 (Rc10 = same as Rc11 or lactones III or IV), CN, OH, (substituted) alkoxy, CONHRc11, CONHSO<sub>2</sub>Rc11, or lactones III or IV; Rc11 = (substituted) alkyl, (substituted) cycloalkyl; A = single bond; alkylene, substituted alkylene, O, S, CO, CO<sub>2</sub>, amide, sulfonamide, urethane, urea; R29-R36 = H, alkyl; a, b = 1, 2]. The compns. may further contain (C) org. bases, (D) silicone-based, F-contg., or nonionic surfactants and (E) org. solvents. In the bilayer **resist** process, pattern shift on pattern transfer to underlayers while O plasma etching is minimized. Its pattern formation on i-ray **resist** coated on a Si wafer by exposing to ArF excimer laser was exemplified.

L17 ANSWER 25 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 23  
 ACCESSION NUMBER: 2001:496392 CAPLUS  
 DOCUMENT NUMBER: 135:99845  
 TITLE: Positive-working **photoresist** composition containing alkali-soluble polymer with silyl group  
 INVENTOR(S): Mizutani, Kazuyoshi; Yanami, Shoichiro  
 PATENT ASSIGNEE(S): Fujii Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 52 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001188349	A2	20010710	JP 2000-303876	20001003
PRIORITY APPLN. INFO.:			JP 1999-298606	A 19991020

AB The compn. comprises (A) a **binder resin** having a repeating unit bearing a structure (CH<sub>2</sub>)<sub>n</sub>SiR<sub>1</sub>R<sub>2</sub>R<sub>3</sub> (R1-3 = alkyl, haloalkyl, halo, alkoxy, trialkylsilyl, trialkylsilyloxy; n = 0, 1) and a repeating unit bearing a group which decomp. by the action of an acid and increases the soly. in an alk. developer at the side chain, (B) a compd. generating an acid by the action of an actinic ray or radiation, (C) a solvent dissolving A and B, (D) an org. base compd., (E) .gtoreq.1 surfactant selected from a fluorosurfactant, a silicone surfactant, and a nonionic surfactant. The compn. shows high resoln. and gives patterns with rectangular cross section and is useful for manuf. of semiconductor device.

L17 ANSWER 26 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 24  
 ACCESSION NUMBER: 2001:421234 CAPLUS  
 DOCUMENT NUMBER: 135:53496  
 TITLE: Positive **photoresist** compositions for manufacture of semiconductor devices  
 INVENTOR(S): Sato, Kenichiro; Kodama, Kunihiko; Mizutani, Kazuyoshi  
 PATENT ASSIGNEE(S): Fujii Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 59 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001159822	A2	20010612	JP 1999-343713	19991202
PRIORITY APPLN. INFO.:			JP 1999-343713	19991202

OTHER SOURCE(S): MARPAT 135:53496

AB The compns. contain (A) .gtoreq.1 compds., generating sulfonic acids by irradiation of actinic light beam or radiation, selected from Markush structures in the document, (B) acid-decomposable polymers, whose soly. in alkali developers is increased by acids, having specified Si-contg. structural repeating units and specified C:O-contg. structural repeating units, (C) .gtoreq.1 solvents for A and B, (D) org. basic compds., and (E) .gtoreq.1 surfactants selected from F compds., Si compds., and nonionic compds. The compns. show small change in isolated line width for exposure amt.

L17 ANSWER 27 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 25

ACCESSION NUMBER: 2001:423557 CAPLUS

DOCUMENT NUMBER: 135:38893

TITLE: Positive **photoresist** compositions for manufacture of semiconductor devices

INVENTOR(S): Sato, Kenichiro; Kodama, Kunihiko; Mizutani, Kazuyoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 66 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 4

## PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001159812	A2	20010612	JP 1999-343714	19991202
US 6506535	B1	20030114	US 2000-698221	20001030

PRIORITY APPLN. INFO.:

JP 1999-307317	A	19991028
JP 1999-331785	A	19991122
JP 1999-338487	A	19991129
JP 1999-343714	A	19991202

OTHER SOURCE(S): MARPAT 135:38893

AB The compns. contain (A) .gtoreq.1 compds., generating sulfonic acids by irradiation of actinic light beam or radiation, selected from Markush structures in the document, (B) polymers, whose soly. in alkali developers is increased by acids, having specified Si-contg. structural repeating units and specified C:O-contg. structural repeating units, (C) .gtoreq.1 solvents for A and B, (D) org. basic compds., and (E) .gtoreq.1 surfactants selected from F compds., Si compds., and nonionic compds. The compns. show small change in isolated line width for exposure amt.

L17 ANSWER 28 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 26

ACCESSION NUMBER: 2001:388948 CAPLUS

DOCUMENT NUMBER: 135:12122

TITLE: Positive-working **photoresist** composition containing sulfonium compound **acid generator**

INVENTOR(S): Sato, Kenichiro; Mizutani, Kazuyoshi

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 65 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

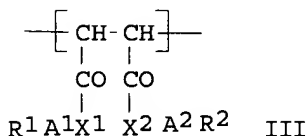
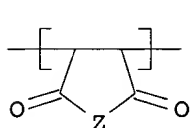
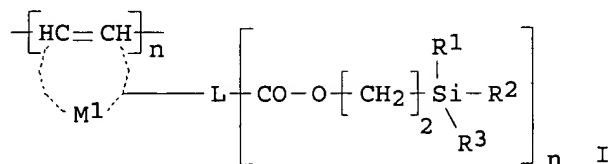
LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 4

## PATENT INFORMATION:



PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001147536	A2	20010529	JP 1999-331785	19991122
US 6506535	B1	20030114	US 2000-698221	20001030
PRIORITY APPLN. INFO.:			JP 1999-307317	A 19991028
			JP 1999-331785	A 19991122
			JP 1999-338487	A 19991129
			JP 1999-343714	A 19991202
OTHER SOURCE(S):		MARPAT 135:12122		
GI				

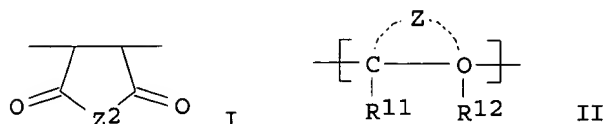


AB The compn. comprises (A) a sulfonium compd. R1R2R3S+.Z- [R1-3 = (substituted) alkyl, (substituted) aryl; Z- = counter anion] which generates an acid by the action of the actinic ray or radiation, (B) an acid-decomposable **resin** having repeating units I (M1 = atoms forming alicyclic structure; n = 1, 2; L = bond, linkage with (n + 1) valences; R', R'', R''' = alkyl, Ph, trialkylsilyl, trialkylsilyloxy) and .gtoreq.1 of II and III (Z = O, NR3; R3 = H, alkyl, OSO2R4; R4 = alkyl, trihalomethyl; X1-2 = H, S, NH, NHSO2; A1-2 = bond, divalent linkage; R1-2 = H, CN, OH, CO2H, CO2R5, CONHR6, alkyl, alkoxy, cyclic hydrocarbon which may have ester or carbonyl group in ring-forming bond; R5 = alkyl, cyclic hydrocarbon which may have ester or carbonyl group in ring-forming bond; R6 = alkyl), (C) .gtoreq.1 solvent dissolving (A) and (B), (D) an org. base compd., and (E) .gtoreq.1 surfactant selected from F-, Si-, and nonionic surfactant. Particle generation in the **resist** soln. is prevented, the compn. shows high sensitivity and resoln. and is useful for manuf. of contact hole patterns in semiconductor device fabrication.

L17 ANSWER 29 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 27  
 ACCESSION NUMBER: 2001:299131 CAPLUS  
 DOCUMENT NUMBER: 134:334282  
 TITLE: Far-UV-sensitive positive **photoresist**  
 compositions containing lactone-ring-bearing polymers  
 INVENTOR(S): Sato, Kenichiro; Adegawa, Yutaka; Aogo, Toshiaki  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 53 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001117234 A2 20010427 JP 1999-298782 19991020  
 PRIORITY APPLN. INFO.: JP 1999-298782 19991020  
 GI



AB The compns., showing good developability and excellent storage stability, comprise **photoacid generators**, polymers comprising (i)  $[\text{CH}(\text{COX1A1R1})\text{CH}(\text{COX2A2R2})]$   $[\text{R1}, \text{R2} = \text{H}, \text{cyano}, \text{OH}, \text{CO2H}, \text{CO2R5} [\text{R5} = \text{alkyl}, \text{cyclic hydrocarbyl}, \text{Y1}, \text{Y2} (\text{R21-30} = \text{H}, \text{alkyl}; \text{a}, \text{b} = 1, 2)], \text{CONHR6} (\text{R6} = \text{alkyl}, \text{cyclic hydrocarbyl}), \text{CONHSO2R6}, \text{alkyl(oxy)}, \text{cyclic hydrocarbyl}, \text{Y1}, \text{Y2}; \text{X} = \text{O}, \text{S}, \text{NH}, \text{NHSO2}, \text{NHSO2NH}; \text{A} = \text{single bond}, \text{bivalent linkage}] \text{ and/or I } [\text{Z2} = \text{O}, \text{NR3} [\text{R3} = \text{H}, \text{OH}, \text{OSO2R4} [\text{R4} = (\text{halo})\text{alkyl}, \text{cycloalkyl}, \text{camphor residue}]]]$  and (ii) II  $[\text{R11}, \text{R12} = \text{H}, \text{cyano}, \text{halo}, \text{alkyl}; \text{Z} = \text{alicyclic groups}]$ , and optional N-contg. basic compds. The polymers have **gtoreq.2 resins** bearing acid-decomposable groups (AG) with different AG mol. concn. from each other.

L17 ANSWER 30 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 28  
 ACCESSION NUMBER: 2001:299130 CAPLUS  
 DOCUMENT NUMBER: 134:318692  
 TITLE: Positive **photoresist** compositions providing line patterns with excellent edge sharpness  
 INVENTOR(S): Mizutani, Kazuyoshi  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 35 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001117233	A2	20010427	JP 1999-298605	19991020
PRIORITY APPLN. INFO.:			JP 1999-298605	19991020

AB The compns. comprise (A) acid-decomposable polymers comprising (i)  $[\text{CH2C}[(\text{CH2})\text{nSiR1R2R3}]\text{H}] [\text{R1-3} = (\text{halo})\text{alkyl}, \text{halo}, \text{alkoxy}, \text{trialkylsilyl(oxy)}; \text{n} = 0, 1]$  and (ii)  $[\text{CH2CY}(\text{LCO2Q})]$   $[\text{Y} = \text{H}, \text{Me}, \text{cyano}, \text{Cl}; \text{L} = \text{single bond}, \text{bivalent linkage}; \text{Q} = \text{H}, \text{acid-decomposable groups}]$  and/or  $[\text{CH}(\text{COX2L2A2})\text{CH}(\text{COX1L1A1})]$   $[\text{X1}, \text{X2} = \text{O}, \text{S}, \text{NH}, \text{NHSO2}; \text{L1}, \text{L2} = \text{single bond}, \text{bivalent linkage}; \text{A1} = \text{Q}, \text{CO2Q}; \text{A2} = \text{H}, \text{cyano}, \text{OH}, \text{CO2H}, \text{CO2R}', \text{CONHR}'', \text{alkyl(oxy)}, \text{cyclic hydrocarbyl}, \text{CO2Q} (\text{R}', \text{R}'' = \text{alkyl})]$ , (B) **photoacid generators**, (C) org. solvents, (D) basic org. compds., (E) F- and/or Si-bearing surfactants and/or nonionic surfactants. The **photoacid generators** may generate org. sulfonic acids upon irradiation.

L17 ANSWER 31 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 29  
 ACCESSION NUMBER: 2001:143826 CAPLUS  
 DOCUMENT NUMBER: 134:200525  
 TITLE: Positive-working **photoresist** composition for far ultraviolet ray exposure  
 INVENTOR(S): Aogo, Toshiaki; Sato, Kenichiro; Kodama, Kunihiro  
 PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 55 pp.

CODEN: JKXXAF

DOCUMENT TYPE:

Patent

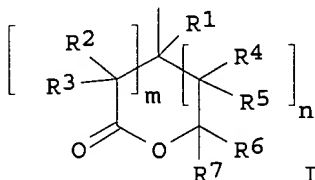
LANGUAGE:

Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001056557	A2	20010227	JP 1999-234240	19990820
PRIORITY APPLN. INFO.: GI			JP 1999-234240	19990820



AB The compn. comprises (A) a compd. generating acid by actinic ray or radiation, (B) a **resin** contg. I [R1 = H, C1-4 alkyl; R2-7 = H, (substituted) alkyl, cycloalkyl, alkenyl, .gtoreq.1 of R6 and R7 is not H, R6 and R7 may form a ring; m, n = 0, 1] as a repeating unit and whose sol. in alkali is increased by the action of acid, and (C) a fluoro- and/or silicone-type surfactant. The **photoresist** shows high sensitivity to far UV ray and generation of development defect and edge roughness is prevented.

L17 ANSWER 32 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 30  
 ACCESSION NUMBER: 2001:803974 CAPLUS  
 DOCUMENT NUMBER: 136:110038  
 TITLE: Evaluation of the standard addition method to determine rate constants for acid generation in chemically amplified **photoresist** at 157 nm  
 AUTHOR(S): Pawloski, Adam Richard; Szmanda, Charles R.; Nealey, Paul F.  
 CORPORATE SOURCE: Department of Chemical Engineering, University of Wisconsin, Madison, USA  
 SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4345(Pt. 2, Advances in Resist Technology and Processing XVIII), 1056-1065  
 CODEN: PSISDG; ISSN: 0277-786X  
 PUBLISHER: SPIE-The International Society for Optical Engineering  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB The rate constns. for acid generation (C parameter) in chem. amplified **photoresist** are detd. for four **photoacid generators** (norbornene dicarboximidyl triflate, tri-Ph sulfonium triflate, bis-4-tert-butylphenyliodonium perfluorooctanesulfonate, and bis-4-tert-butylphenyliodonium triflate) under exposure to 157 nm radiation using a std. addn. technique. The technique utilizes an in film neutralization of photogenerated acid by base quencher to det. the increase in exposure energy necessary to produce an equiv. fee acid concn. at each loading of base. The authors present a general model to interpret the data that also accounts for the strong absorption of radiation by the **resist** film. An av. absorption coeff. of 13.2 .mu.m<sup>-1</sup> (base e) has been measured at 157 nm for these **resist** films. Results from 157 nm irradsn. are compared to deep-UV and ionizing radiation, indicating that **resist** photochem. at 157 nm includes processes important to both energy regimes.

REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 33 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 31  
ACCESSION NUMBER: 2000:115243 CAPLUS  
DOCUMENT NUMBER: 132:158926  
TITLE: Positive-working photosensitive **resin**  
composition useful in production of semiconductor  
devices  
INVENTOR(S): Kawabe, Yasumasa; Sato, Kenichiro; Aogo, Toshiaki  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000047385	A2	20000218	JP 1998-170197	19980617
PRIORITY APPLN. INFO.:			JP 1998-144436	19980526

AB The title **resin** compn. contains (a) a polymer which has a cyclic  
aliph. hydrocarbon skeleton and is cleaved in the action of acid to become  
alkali sol., (b) a compd. generating an acid upon activating radiation  
irradn., (c) a carboxylic acid anhydride with mol. wt. .ltoreq.1000, (d) a  
N-contg. basic compd., and (e) F- and/or Si-type surfactant. The compn.  
shows improved developability and provides high resoln. patterns with good  
profile and high residual film rate by using deep UV rays, esp. ArF  
excimer laser beams.

L17 ANSWER 34 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 32  
ACCESSION NUMBER: 2000:67678 CAPLUS  
DOCUMENT NUMBER: 132:130026  
TITLE: Positive-working **resist** composition suited  
for use in deep UV ray exposure  
INVENTOR(S): Aogo, Toshiaki  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000029219	A2	20000128	JP 1998-197730	19980713
PRIORITY APPLN. INFO.:			JP 1998-197730	19980713

AB The title **resist** compn. contains (a) a compd. generating an acid  
upon activating ray or radiation irradn., (b) a **resin** having  
polycyclic alicyclic groups and CO<sub>2</sub>H groups, (c) a compd. having .gtoreq.2  
groups CR<sub>1</sub>R<sub>2</sub>C:CR<sub>3</sub>Z [R<sub>1</sub>-3 = H, (substituted) alkyl, (substituted)  
cycloalkyl, 2 of R<sub>1</sub>3 may link each other to form a ring structure  
comprising 3-8 C atoms and heteroatoms; Z = O, S, SO<sub>2</sub>, NH], (d) a cyclic  
aliph. org. carboxylic acid with mol. wt. .ltoreq.1000 and/or a  
naphthalene ring-contg. org. carboxylic acid, (e) a N-contg. basic compd.,  
and (f) a F-type and/or Si-type surfactant. The compn. shows improved  
developability and provides a resoln. pattern with high residual film rate  
and good profile using deep UV rays, esp., ArF excimer lasers.

L17 ANSWER 35 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 33  
ACCESSION NUMBER: 2000:67677 CAPLUS  
DOCUMENT NUMBER: 132:130025

TITLE: Positive-working **resist** composition suited  
for use in deep ultraviolet ray exposure  
INVENTOR(S): Aogo, Toshiaki  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 44 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000029218	A2	20000128	JP 1998-197729	19980713
PRIORITY APPLN. INFO.:			JP 1998-197729	19980713

AB The title **resist** compn. contains (a) a compd. generating an acid upon activating ray or radiation irradiation, (b) a **resin** having polycyclic alicyclic groups and CO<sub>2</sub>H groups, (c) a compd. having .gtoreq.2 groups CR<sub>1</sub>R<sub>2</sub>C:CR<sub>3</sub>Z [R<sub>1</sub>-3 = H, (substituted) alkyl, (substituted) cycloalkyl, 2 of R<sub>1</sub>3 may link each other to form a ring structure comprising 3-8 C atoms and heteroatoms; Z = O, S, SO<sub>2</sub>, NH], (d) a N-contg. basic compd., and (e) a F-type and/or Si-type surfactant. The compn. shows improved developability and provides a pattern with high residual film rate and good profile using deep UV rays, esp., ArF excimer lasers.

L17 ANSWER 36 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 34

ACCESSION NUMBER: 2000:441519 CAPLUS

DOCUMENT NUMBER: 133:81571

TITLE: **Photoresist** composition suitable for deep-UV wavelength imaging

INVENTOR(S): Trefonas, Peter, III; Taylor, Gary N.

PATENT ASSIGNEE(S): Shipley Company LLC, USA

SOURCE: Eur. Pat. Appl., 14 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1014193	A1	20000628	EP 1999-125625	19991222
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000298348	A2	20001024	JP 1999-376940	19991224

PRIORITY APPLN. INFO.: US 1998-219468 A 19981223

AB The present invention provides a novel **photoresist** compn. suitable for deep-UV wavelength imaging comprising a **resin binder**, a photosensitive **acid generator**, and an amine additive. In a first aspect, the amine additive preferably is nonarom., has from about 9 to about 16 carbon atoms, contains no primary or secondary amine groups, and/or contains no multiple tertiary amine groups where two tertiary groups are sepd. by a linkage of optionally substituted ethylene. In a related aspect, the amine is a nonarom. amine comprising either a tertiary nitrogen alicyclic ring member which is at a junction position of at least two rings of a multiring compd. or a tertiary nitrogen that is not a ring member and substituted by at least two tertiary or quaternary carbon radicals.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 37 OF 48 USPATFULL

ACCESSION NUMBER: 2000:142069 USPATFULL

TITLE: **Resist** composition and patterning process

INVENTOR(S): Satoshi, Watanabe, Nakakubiki-gun, Japan  
 Osamu, Watanabe, Nakakubiki-gun, Japan  
 Tomoyoshi, Furihata, Usui-gun, Japan  
 Yoshifumi, Takeda, Nakakubiki-gun, Japan  
 Shigehiro, Nagura, Nakakubiki-gun, Japan  
 Toshinobu, Ishihara, Nakakubiki-gun, Japan  
 Tsuguo, Yamaoka, Funabashi, Japan  
 PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Tokyo, Japan (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6136502		20001024
APPLICATION INFO.:	US 1998-167567		19981007 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1997-291681	19971008
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Chu, John S.	
LEGAL REPRESENTATIVE:	Millen, White, Zelano & Branigan, P.C.	
NUMBER OF CLAIMS:	19	
EXEMPLARY CLAIM:	1	
LINE COUNT:	2356	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A **resist** composition comprising (A) an organic solvent; (B) at least two polymers with weight average molecular weights of 1,000-500,000, which have at least one type of acid labile group and are crosslinked within a molecule and/or between molecules with crosslinking groups having C--O--C linkages; and (C) a **photoacid generator** is sensitive to high-energy radiation, has excellent sensitivity, resolution, and plasma etching resistance, and provides **resist** patterns of outstanding thermal stability and reproducibility. Patterns obtained with this **resist** composition are less prone to overhanging and have excellent dimensional controllability. The **resist** composition is suitable as a micropatterning material for VLSI fabrication because it has a low absorption at the exposure wavelength of a KrF excimer laser, thus enabling the easy formation of a finely defined pattern having sidewalls perpendicular to the substrate.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 38 OF 48 USPATFULL

ACCESSION NUMBER: 2000:142068 USPATFULL  
 TITLE: Polymers and **photoresist** compositions comprising same  
 INVENTOR(S): Trefonas, III, Peter, Medway, MA, United States  
 Taylor, Gary N., Northboro, MA, United States  
 Barclay, George G., Jefferson, MA, United States  
 PATENT ASSIGNEE(S): Shipley Company, L.L.C., Marlborough, MA, United States (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6136501		20001024
APPLICATION INFO.:	US 1998-143462		19980828 (9)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Chu, John S.		
ASSISTANT EXAMINER:	Clarke, Yvette M		
LEGAL REPRESENTATIVE:	Corless, Peter F., Frickey, Darryl P., Cairns, S. Matthew		

NUMBER OF CLAIMS: 30  
EXEMPLARY CLAIM: 1,20  
LINE COUNT: 865

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides novel polymers and **photoresist** compositions that comprise the polymers as a **resin binder** component. The **photoresist** compositions of the invention can provide highly resolved relief images upon exposure to short wavelengths, including 193 nm and 248 nm. The **resists** of the invention are also useful for imaging at other wavelengths such as 365 nm. Polymers of the invention include those that comprise a photogenerated acid-labile unit that is ester group that comprises an alkyl moiety having about 5 or more carbon atoms and at least two secondary, tertiary or quaternary carbon atoms. The alkyl moiety of the ester group can be a noncyclic or single ring alicyclic group. The carboxyl (C.dbd.O(O)) oxygen of the ester group is often preferably directly bonded to a quaternary carbon atom.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 39 OF 48 USPATFULL

ACCESSION NUMBER: 2000:57508 USPATFULL  
TITLE: Positive-working photosensitive composition  
INVENTOR(S): Kodama, Kunihiro, Shizuoka, Japan  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Kanagawa, Korea, Republic of (non-U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 6060213		20000509
APPLICATION INFO.:	US 1999-270516		19990317 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	JP 1998-66990	19980317
DOCUMENT TYPE:	Utility	
FILE SEGMENT:	Granted	
PRIMARY EXAMINER:	Baxter, Janet	
ASSISTANT EXAMINER:	Lee, Sin J.	
LEGAL REPRESENTATIVE:	Sughrue, Mion, Zinn, Macpeak & Seas, PLLC	
NUMBER OF CLAIMS:	7	
EXEMPLARY CLAIM:	1	
LINE COUNT:	1480	

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides a positive-working photosensitive composition which comprises (a) a basic nitrogen-containing compound having a polycyclic structure represented by formula (I) and (b) at least one of compounds represented by formulae (II) to (IV) defined in the specification: wherein Y and Z may be the same or different and each represent a straight-chain, branched or cyclic alkylene group, which may contain a hetero atom or may be substituted. The positive-working photosensitive composition which exhibits no reduction of width of **resist** pattern or no T-top deformation of surface shape of **resist** pattern with time between after exposure and heat treatment without causing sensitivity drop.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 40 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 35  
ACCESSION NUMBER: 1999:752381 CAPLUS  
DOCUMENT NUMBER: 132:17147  
TITLE: Positive-working photosensitive composition  
INVENTOR(S): Kodama, Kunihiro  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11327149	A2	19991126	JP 1999-70372	19990316
US 6060213	A	20000509	US 1999-270516	19990317
PRIORITY APPLN. INFO.: JP 1998-66990			19980317	

OTHER SOURCE(S): MARPAT 132:17147

GI For diagram(s), see printed CA Issue.

AB The title photosensitive compn. contains (a) a polycyclic basic N-contg. compd. I (Y, Z = straight-chain, branched or cyclic alkylene which may contain heteroatoms and may be substituted), (b) .gtoreq.1 compd. selected from II-IV [R1-37 = H, straight-chain, branched or cyclic alkyl, straight-chain, branched or cyclic alkoxy, OH, halo, SR38 (R38 = straight-chain, branched or cyclic alkyl, aryl); X- = benzenesulfonic acid, naphthalenesulfonic acid or anthracene sulfonic acid anion which has (i) .gtoreq.1 group selected from branched or cyclic C.gtoeq.8 alkyl and alkoxy, .gtoreq.2 groups selected from straight-chain, branched or cyclic C4-7 alkyl and alkoxy, or .gtoreq.3 groups selected from straight-chain, branched or cyclic C1-3 alkyl and alkoxy or (ii) .gtoreq.1 group selected from ester, R39CO, R40CONH, R41NH, R42OCONH, R43NHCO2, R44NHCONH, R45NHCSN, R46SO2NH, and NO2 groups (R39-46 = straight-chain, branched or cyclic alkyl, aryl)], which generates an acid upon activating radiation irradiation, and (c) a **resin** having groups which are decompd. by the action of acid to increase the soly. in alkali developing solns. The compn. may contain (a), (b), (d) a low-mol.-wt. dissoln.-inhibiting compd. with mol. wt. .ltoreq.3000 which has an acid-decomposable group and of which the soly. in alkali developing solns. increases by the action of acid, and (e) a **resin** insol. in water and sol. in alkali developing solns. The compn. shows high photosensitivity and provides a high resoln. pattern with good profile independent of the elapse of time from exposure to bake.

L17 ANSWER 41 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 36

ACCESSION NUMBER: 1999:752377 CAPLUS

DOCUMENT NUMBER: 132:7565

TITLE: Positive-working photosensitive **resin**  
 composition useful in production of semiconductor devices

INVENTOR(S): Kawabe, Yasumasa; Sato, Kenichiro; Aogo, Toshiaki

PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11327145	A2	19991126	JP 1998-132291	19980514
PRIORITY APPLN. INFO.: JP 1998-132291			19980514	

AB The title **resin** compn. contains (a) a cyclic aliph. hydrocarbon skeleton structure-contg. polymer that is decompd. by the action of acid to become alkali-sol., (b) a compd. that generates an acid upon active ray or radiation irradiation, (c) a sulfonamide structure-contg. compd. with mol. wt. .ltoreq.1000, (d) a N-contg. basic compd., and (e) a F-type and/or Si-type surfactant. The compn. shows improved developability and provides a high resoln. pattern with good profile by using deep UV rays, esp., ArF

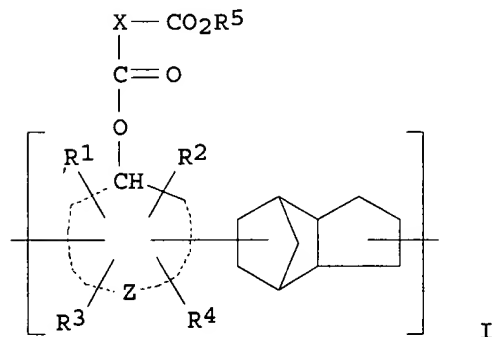


excimer laser beams and is useful for manuf. of semiconductor devices.

L17 ANSWER 42 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 37  
ACCESSION NUMBER: 1999:819124 CAPLUS  
DOCUMENT NUMBER: 132:71367  
TITLE: Positive photoimaging composition for photofabrication  
INVENTOR(S): Kawabe, Yasumasa; Sato, Kenichiro; Aoai, Toshiaki  
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan  
SOURCE: Eur. Pat. Appl., 57 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 967522	A1	19991229	EP 1999-111963	19990625
EP 967522	B1	20030219		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2000019733	A2	20000121	JP 1998-180868	19980626
JP 2000019734	A2	20000121	JP 1998-186271	19980701
JP 2000019735	A2	20000121	JP 1998-186272	19980701
JP 2000019736	A2	20000121	JP 1998-186273	19980701
KR 2000006477	A	20000125	KR 1999-24279	19990625
PRIORITY APPLN. INFO.:			JP 1998-180868	A 19980626
			JP 1998-186271	A 19980701
			JP 1998-186272	A 19980701
			JP 1998-186273	A 19980701

GI



AB A UV-sensitive pos. photoimaging compn. for photofabrication comprises a **photoacid generator**, a nitrogen-contg. basic compd., a polymer having the group represented by the formula I (R1-4 = H, OH, carboxyl, alkyl, alkoxy, or cycloalkyl, provided that either R1 and R3 or R2 and R4 may be bonded to each other to form a ring; X = a bivalent org. group having 2-20 carbon atoms; R5 = H, carboxyl, alkyl, cycloalkyl, or such a group that the -CO2R5 functions as a group which decomp. by the action of an acid; Z = a group of atoms which form a cyclohexane or decalin ring in combination with carbon atoms), and at least of a fluorine-contg. surfactant and a silicone surfactant.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 43 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 38

ACCESSION NUMBER: 1999:246939 CAPLUS  
 DOCUMENT NUMBER: 130:274098  
 TITLE: **Photoresist** composition  
 INVENTOR(S): Watanabe, Satoshi; Watanabe, Osamu; Furihata, Tomoyoshi; Takeda, Yoshifumi; Nagura, Shigehiro; Ishihara, Toshinobu; Yamaoka, Tsuguo  
 PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan  
 SOURCE: Eur. Pat. Appl., 82 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 908783	A1	19990414	EP 1998-308175	19981008
EP 908783	B1	20020731		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 11190904	A2	19990713	JP 1998-299177	19981006
US 6136502	A	20001024	US 1998-167567	19981007

PRIORITY APPLN. INFO.: JP 1997-291681 A 19971008  
 AB A **photoresist** compn. comprises (A) an org. solvent, (B) at least two polymers with wt.-av. mol. wts. of 1000-500,000, which have at least one type of acid labile groups and are crosslinked within a mol. and/or between mols. with crosslinking groups having C-O-C linkages, and (C) a **photoacid generator**. The **photoresist** compn. has excellent sensitivity and resolu. and provides **resist** patterns of outstanding thermal stability, reproducibility, and plasma etching resistance. Patterns obtained with the **photoresist** compn. are less prone to overhanging and have excellent dimensional controllability. The **photoresist** compn. is suitable as a micropatterning material for VLSI fabrication.  
 REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 44 OF 48 CAPLUS COPYRIGHT 2003 ACS DUPLICATE 39  
 ACCESSION NUMBER: 2000:128097 CAPLUS  
 DOCUMENT NUMBER: 132:271599  
 TITLE: Measuring acid generation efficiency in chemically amplified **resists** with all three beams  
 AUTHOR(S): Szmanda, Charles R.; Brainard, Robert L.; Mackevich, Joseph F.; Awaji, Akira; Tanaka, Tsutomu; Yamada, Yutaka; Bohland, John; Tedesco, Serge; Dal'Zotto, Bernard; Bruenger, Wilhelm; Torkler, Michael; Fallmann, Wolfgang; Loeschner, Hans; Kaesmaier, Rainer; Nealey, Paul M.; Pawloski, Adam R.  
 CORPORATE SOURCE: Shipley Company, Marlborough, MA, 01752, USA  
 SOURCE: Journal of Vacuum Science & Technology, B: Microelectronics and Nanometer Structures (1999), 17(6), 3356-3361  
 CODEN: JVTBD9; ISSN: 0734-211X  
 PUBLISHER: American Institute of Physics  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 AB A method for measuring acid generation efficiency is developed to det. the relative efficiency of lithog. **resists acid generators** (PAGs) upon radiation with photon-, electron-, and ion-beams. In this method, chem. amplified **resists** are prepd. with varying amts. of base quencher (1.8-diazabicyclo[5.4.0]undec-7-ene), coated into thin films (1000 .ANG.), and exposed. Linear plots of the base concn. against the threshold exposure dose for each **resist** yield the threshold acid concn. and the acid generation rate const. for

each PAG. The acid-generating efficiency of the four PAGs: norbornenedicarboximidyl triflate, triphenylsulfonium triflate, bis-4-tert-butylphenyliodonium perfluorooctanesulfonate, and bis-4-tert-butylphenyliodonium triflate upon irradiation with deep-UV (248 nm), extreme-UV (13.4 nm), x-ray (1 nm), electron-beam (30 and 50 keV), and He<sup>+</sup> ions were evaluated.

REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L17 ANSWER 45 OF 48 USPATFULL

ACCESSION NUMBER: 97:83772 USPATFULL

TITLE: Process for thermochemical generation of acid and for thermal imaging, and imaging medium for use therein

INVENTOR(S): Boggs, Roger A., Wayland, MA, United States  
Grasshoff, Jurgen M., Hudson, MA, United States  
Mischke, Mark R., Arlington, MA, United States  
Puttick, Anthony J., Arlington, MA, United States  
Telfer, Stephen J., Arlington, MA, United States  
Waller, David P., Lexington, MA, United States  
Waterman, Kenneth C., Arlington, MA, United States  
PATENT ASSIGNEE(S): Polaroid Corporation, Cambridge, MA, United States  
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5667943		19970916
APPLICATION INFO.:	US 1996-630967		19960408 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1994-345073, filed on 28 Nov 1994, now patented, Pat. No. US 5534393 which is a division of Ser. No. US 1993-106353, filed on 13 Aug 1993, now patented, Pat. No. US 5401619 which is a division of Ser. No. US 1992-965172, filed on 23 Oct 1992, now patented, Pat. No. US 5278031		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Letscher, Geraldine		
LEGAL REPRESENTATIVE:	Cole, David J.		
NUMBER OF CLAIMS:	11		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	1498		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Certain squaric acid derivatives are useful for the thermochemical generation of acid. The squaric acid derivatives may be used in imaging media in conjunction with acid-sensitive materials which undergo a color change when contacted by the acid generated from the squaric acid derivatives. Preferably, the acid-sensitive materials undergo an irreversible color change, so that the image can be fixed by neutralizing all the acid generated with excess base, thereby preventing further color change in the image during long term storage.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 46 OF 48 USPATFULL

ACCESSION NUMBER: 96:60579 USPATFULL

TITLE: Process for thermochemical generation of acid and for thermal imaging

INVENTOR(S): Boggs, Roger A., Wayland, MA, United States  
Grasshoff, Jurgen M., Hudson, MA, United States  
Mischke, Mark R., Arlington, MA, United States  
Puttick, Anthony J., Arlington, MA, United States  
Telfer, Stephen J., Arlington, MA, United States  
Waller, David P., Lexington, MA, United States  
Waterman, Kenneth C., Arlington, MA, United States

PATENT ASSIGNEE(S): Polaroid Corporation, Cambridge, MA, United States  
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5534393		19960709
APPLICATION INFO.:	US 1994-345073		19941128 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1993-106353, filed on 13 Aug 1993, now patented, Pat. No. US 5401619 which is a division of Ser. No. US 1992-965172, filed on 23 Oct 1992, now patented, Pat. No. US 5278031		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Letscher, Geraldine		
LEGAL REPRESENTATIVE:	Cole, David J.		
NUMBER OF CLAIMS:	13		
EXEMPLARY CLAIM:	1,2		
NUMBER OF DRAWINGS:	3 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	1515		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Certain squaric acid derivatives are useful for the thermochemical generation of acid. The squaric acid derivatives may be used in imaging media in conjunction with acid-sensitive materials which undergo a color change when contacted by the acid generated from the squaric acid derivatives. Preferably, the acid-sensitive materials undergo an irreversible color change, so that the image can be fixed by neutralizing all the acid generated with excess base, thereby preventing further color change in the image during long term storage.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 47 OF 48 USPATFULL

ACCESSION NUMBER: 95:27187 USPATFULL  
TITLE: Process for thermochemical generation of acid and for thermal imaging, and imaging medium for use therein  
INVENTOR(S): Boggs, Roger A., Wayland, MA, United States  
Grasshoff, Jurgen M., Hudson, MA, United States  
Mischke, Mark R., Arlington, MA, United States  
Puttick, Anthony J., Arlington, MA, United States  
Telfer, Stephen J., Arlington, MA, United States  
Waller, David P., Lexington, MA, United States  
Waterman, Kenneth C., Arlington, MA, United States  
PATENT ASSIGNEE(S): Polaroid Corporation, Cambridge, MA, United States  
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5401619		19950328
APPLICATION INFO.:	US 1993-106353		19930813 (8)
RELATED APPLN. INFO.:	Division of Ser. No. US 1992-965172, filed on 23 Oct 1992, now patented, Pat. No. US 5278031		
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Bowers, Jr., Charles L.		
ASSISTANT EXAMINER:	Letscher, Geraldine		
LEGAL REPRESENTATIVE:	Cole, David J.		
NUMBER OF CLAIMS:	12		
EXEMPLARY CLAIM:	2		
NUMBER OF DRAWINGS:	3 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	1536		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Certain squaric acid derivatives are useful for the thermochemical generation of acid. The squaric acid derivatives may be used in imaging media in conjunction with acid-sensitive materials which undergo a color

change when contacted by the acid generated from the squaric acid derivatives. Preferably, the acid-sensitive materials undergo an irreversible color change, so that the image can be fixed by neutralizing all the acid generated with excess base, thereby preventing further color change in the image during long term storage.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L17 ANSWER 48 OF 48 USPATFULL

ACCESSION NUMBER: 94:3655 USPATFULL

TITLE: Process for thermochemical generation of squaric acid and for thermal imaging, and imaging medium for use therein

INVENTOR(S): Boggs, Roger A., Wayland, MA, United States  
Grasshoff, Jurgen M., Hudson, MA, United States  
Mischke, Mark R., Arlington, MA, United States  
Puttick, Anthony J., Arlington, MA, United States  
Telfer, Stephen J., Arlington, MA, United States  
Waller, David P., Lexington, MA, United States  
Waterman, Kenneth C., Arlington, MA, United States  
PATENT ASSIGNEE(S): Polaroid Corporation, Cambridge, MA, United States  
(U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 5278031		19940111
APPLICATION INFO.:	US 1992-965172		19921023 (7)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Bowers, Jr., Charles L.		
ASSISTANT EXAMINER:	Letscher, Geraldine		
LEGAL REPRESENTATIVE:	Cole, David J.		
NUMBER OF CLAIMS:	21		
EXEMPLARY CLAIM:	1		
NUMBER OF DRAWINGS:	3 Drawing Figure(s); 3 Drawing Page(s)		
LINE COUNT:	1517		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Certain squaric acid derivatives are useful for the thermochemical generation of acid. The squaric acid derivatives may be used in imaging media in conjunction with acid-sensitive materials which undergo a color change when contacted by the acid generated from the squaric acid derivatives. Preferably, the acid-sensitive materials undergo an irreversible color change, so that the image can be fixed by neutralizing all the acid generated with excess base, thereby preventing further color change in the image during long term storage.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L26 ANSWER 53 OF 53 USPATFULL  
 ACCESSION NUMBER: 74:17590 USPATFULL  
 TITLE: FLAME RETARDANT, INTUMESCENT AND NON-BURNING FLEXIBLE  
 POLYURETHANE FOAM  
 INVENTOR(S): Krentz, Jr., George Robert, Twin Oaks, PA, United  
 States  
 PATENT ASSIGNEE(S): Scott Paper Company, Philadelphia, PA, United States  
 (U.S. corporation)

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 3803063		19740409
APPLICATION INFO.:	US 1969-866372		19691014 (4)
DOCUMENT TYPE:	Utility		
FILE SEGMENT:	Granted		
PRIMARY EXAMINER:	Czaja, Donald E.		
ASSISTANT EXAMINER:	Rzucidlo, Eugene C.		
LEGAL REPRESENTATIVE:	DeBenedictis, Nicholas J., Kane, John W.		
NUMBER OF CLAIMS:	11		
LINE COUNT:	476		

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A non-burning imparting amount of a mixture of (a) a nitrogen and phosphorus-containing compound, and (b) a polycondensate of polymerized unsaturated fatty acids with aliphatic amines is incorporated in a foamable polyurethane-forming reaction mixture to produce a flame-retardant, intumescent and non-burning flexible polyurethane foam which would otherwise be consumed by exposure to a flame.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d l26 and (?acid (w) generator)  
 ' (?ACID, (W) ' IS NOT VALID HERE

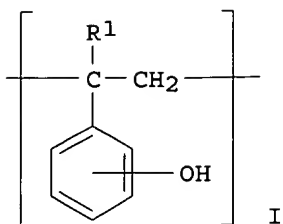
=> s l26 and (?acid (w) generator)  
 L27 1 L26 AND (?ACID (W). GENERATOR)

=> d l27 1 ibib abs hitstr

L27 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2003 ACS  
 ACCESSION NUMBER: 2000:143347 CAPLUS  
 DOCUMENT NUMBER: 132:201042  
 TITLE: Radiation-sensitive **resin** composition useful  
 as **resist**  
 INVENTOR(S): Chiba, Takashi; Kobayashi, Eiichi; Iwanaga, Shinichiro  
 PATENT ASSIGNEE(S): JSR Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 21 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000066382	A2	20000303	JP 1998-236167	19980821
PRIORITY APPLN. INFO.:			JP 1998-236167	19980821

GI



AB The title **resin** compn. contains (a) a copolymer having repeating units I and CR<sub>2</sub>(CO<sub>2</sub>R<sub>3</sub>)CH<sub>2</sub> [R<sub>1</sub>, R<sub>2</sub> = H or Me; R<sub>3</sub> = tert-Bu or CR<sub>4</sub>R<sub>5</sub>CHR<sub>6</sub>COR<sub>7</sub> (R<sub>4</sub>, R<sub>5</sub> = H, C1-6 straight-chain or branched alkyl, 5- to 8-membered cyclic alkyl, R<sub>4</sub> and R<sub>5</sub> may link each other to form a 5- to 8-membered carbon ring along with the C atom in the group; R<sub>6</sub>, R<sub>7</sub> = H, C1- 6 straight-chain or branched alkyl, 5- to 8-membered cyclic alkyl, R<sub>6</sub> and R<sub>7</sub> may link each other to form a 5- to 8-membered carbon ring along with the 2 C atoms in the group)], (b) a radiation-sensitive **acid generator**, and (c) a OH-contg. basic compd. The compn. shows high sensitivity esp. toward far UV rays, x-ray, and electron beams and provides high resoln. patterns with good profile even on basic substrates.

IT 17121-34-5

RL: TEM (Technical or engineered material use); USES (Uses)  
(radiation **resist** contg. hydroxystyrene-Bu acrylate  
copolymer, **acid generator**, and basic compd.)

RN 17121-34-5 CAPLUS

CN 2-Propanol, 1,1',1'',1'''-[[[(2-hydroxypropyl)iminol]bis(2,1-ethanediyl)nitrilo]]tetrakis- (9CI) (CA INDEX NAME)

